	Author	Coulter and Harris (1983) citation in text of article
1	Skurnick S *et al.* (2010)	Fab fragments purified from the human mAb to PNAG, prepared using papain conjugated to agarose beads (Sigma-Aldrich) as described (40);
2	Backovic M *et al.* (2010)	Enzymatic digestion of antibodies with papain (and less often with pepsin) has traditionally been used for Fab production (Porter, 1958, 1959; Coulter and Harris, 1983; Rousseaux et al., 1983).
3	Nasseff HM *et al.* (2009)	Fab fragments can be directly generated using thiol proteases such as papain or ficin or, alternatively, F(ab′)2 fragments can be generated using bromelain, pepsin, or ficin, and the disulfide hinge is subsequently cleaved using a reducing agent, generating Fab fragments.[9,10]
4	Niwa T *et al.* (2009)	The concentration of the obtained F(ab)2 fragments was calculated based on their absorption at 280 nm, assuming an *E* value of 14 [19].
5	Silva SR *et al.* (2010)	To obtain Fab and Fc fragments, IgG1 samples were digested by solid phase papain (Sigma-Aldrich), as described by Coulter and Harris (28).
6	Kimura S *et al.* (2008)	Preparation of Fab fragments was performed as previously described (Coulter and Harris, 1983).
7	Brereton HM *et al.* (2005	Fab fragments were purified on a Q Sepharose HP column and eluted with a linear NaCl gradient (0–1 M).[30]
8	Gora M *et al.* (2004)	Rabbit IgG Fab preparations were prepared using immobilized papain (Perbio Science, Tattenhall, UK) followed by chromatography through protein A Sepharose to remove the undigested IgG and Fc fragments [27].
9	Kobayashi N *et al.* (2003)	The flow-through solution containing the F(ab')2 fragment was collected, dialysed against cold buffer A (1 day), concentrated and its protein concentration determined from the absorption at 280 nm assuming an E-value of 14 (Coulter and Harris, 1983).
10	Mukherjee M *et al.* (2002)	Anti-78 kDa Fab fragments were prepared as described by Coulter and Harris (1983).
11	Luo QZ *et al.* (2002)	Therefore the optimal incubation time for cleavage of IgG with immobilized papain is much longer than that with free papain, which was consistent with the result obtained by Coulter et al. [27].
12	Kobayashi N *et al.* (2000)	The flow-through solution containing the F(ab')2 fragment was collected, and its protein concentration determined from the absorption at 280 nm assuming an E-value of 14 (Coulter and Harris, 1983).
13	Mullock BM *et al.* (2000)	Monovalent Fab fragments of rabbit anti-Syn7#2 IgG were prepared according to Coulter and Harris (1983) and then affinity purified like the intact antibodies.
14	Gomez HF *et al.* (1999)	The IgG was purified using a modification of the method described by Goding[24] and Coulter et al.[25]
15	Clement S *et al.* (1999)	Fab fragments were prepared by a slight modification of the method of Coulter and Harris.[21]
16	Almeida SR *et al.* (1998)	The product was passed once through a protein-A-Sepharose column. F(ab) fragments were obtained in the void volume, whereas intact IgG and Fc fragments were retained in the column [18].
17	Sinha D *et al.* (1998)	To obtain Fab fragments, the antibodies were cleaved with papain (Coulter and Harris, 1983) and passed over a protein A column to remove the Fc fragments and any undigested IgG.
18	Ng PC *et al.* (1997)	The protein concentration of IgG, F(ab')2, and Fab was determined from the absorbance at 280 nm with a Beckman DU640 spectrophotometer (Beckman Instruments, Inc., Fullerton, California USA) using the extinction coefficient of 1.4 (cm • mg/ml). [15]
19	Koyama H *et al.* (1996)	Fab fragments of monoclonal antibodies against a2 integrin receptor were prepared by papain cleavage of protein G–Sepharose-bound IgG (Coulter and

		Harris, 1983).
20	Wong GK *et al.* (1996)	Protein concentrations were estimated by measuring OD_{280} using an extinction coefficient of 1.44 (Mandy and Nisonoff, 1963; Coulter and Harris, 1983) for both whole antibody and Fab fragments.
21	Balthasar JP *et al.* (1996)	Anti-MTX Fab fragments were prepared and purified from anti-MTX IgG following the procedure of Coulter and Harris, with slight modification.[21]
22	Krop I *et al.* (1996)	Fab rabbit anti-mouse ***p*** was prepared from purified IgC (Jackson ImmunoResearch Laboratories) using immobilized papain (Pierce, Rockford, IL) (44), and biotinylated with NHS (N-hydroxysuccinimide)-biotin (Zymed, San Francisco, CA). LFA-1 Ab I21/7 (rat IgG2a) was obtained from Life Technologies.
23	Kolodiej SJ *et al.* (1996)	Fab fragments were prepared by digestion with papain essentially as described (Coulter and Harris, 1983) using a 100:1 (w:w) ratio of 6E8 to papain.
24	D'Cruz OJ *et al.* (1995)	The protein concentrations of dialyzed IgG and *Fab* fractions were determined spectrophotometrically with values of $E^{1\%}$ = 14.0 and 14.8 respectively (Coulter and Harris, 1983)
25	Agner AE *et al.* (1995)	Papain fragmentation of IgG produces an amino end Fab fragment that retains its antigen-binding capabilities, has low nonspecific binding, which does not crosslink to antigens and will not precipitate or clump antigen-antibody complexes (Coulter and Harris, 1983).
26	Porta C *et al.* (1994)	A method employing papain attached to beaded agarose (Sigma Chemical Co.) and adapted from the described by Coulter and Harris (1983) was used.
27	Kamihira M *et al.* (1994)	The Fab and Fc fragments were prepared according to the conventional method (10) using solid-phase papain and protein A column chromatography.
28	Otteson EW *et al.* (1994)	Fab fragments of mAb 439 were prepared by digestion with papain (24). The Fab and Fc fragments were separated on an immobilized protein A column (Pierce Chemical Co.) (25).
29	Zhang HF *et al.* (1993)	The protein concentrations of dialyzed IgG and *Fab* fractions were determined spectophotometrically with values of $E^{1\%}$ = 14.0 and 14.8 respectively (Coulter and Harris, 1983)
30	Gilbert MS *et al.* (1992)	Total IgG was first purified using a protein A column (Pierce, Rockford, IL), and the purified IgG was cleaved with papain (Coulter and Harris, 1983) to obtain Fab fragments.
31	Sutor GC *et al.* (1992)	Papain cleavage of rabbit anti-Id was performed according to Coulter and Harris (23). with some modifications.
32	Jons T *et al.* (1992)	F(ab) fragments were prepared by papain cleavage (Coulter and Harris, 1983).
33	Mahanthappa K *et al.* (1992)	Fab fragments were generated by incubation of the purified antibodies with immobilized papain (Pierce Chemical) by the method of Coulter and Harris (1983) and again purified by protein A-Sepharose 4B chromatography.
34	Ruf W *et al.* (1991)	Fab fragments of the Mabs….were produced by cleavage of the purified IgG with immobilized papain (29).
35	Ruf W *et al.* (1991)	Fab fragments of mAbs were produced by cleavage of purified IgG with immobilized papain (16)….
36	Pikuleva IA *et al.* (1991)	The degree of modification was determined spectrophotometrically, using the molar extinction coefficient....for IgG [19].
37	Taylor FB *et al.* (1991)	Fab fragments of TF9-5B7 were prepared by Coulter at al. [19].
38	Rock P *et al.* (1991)	Fab fragments were prepared from rabbit polyclonal anti-Forssman and anti-asialo-GM, IgG by the method of Coulter and Harris (1983) and dialyzed against 10 mM phosphate/ IO mM NaCl buffer, pH 7.4.
39	Rock P *et al.* (1990)	Fab fragments of IgG fractions were prepared by using established procedures (Coulter & Harris, 1983).

40	Bessen D *et al.* (1990)	The eluant was dialyzed, concentrated, and digested with immobilized papain overnight at 37°C with rotation (24) (Pierce).
41	Pikuleva IA *et al.* (1989)	***(Translated from Russian)*** IgG from normal rabbit plasma was obtained by fractioning with ammonium sulphate, with subsequent cellulose chromatography DE-32 [6]. A mixture of unpurified activated derivatives of hemin in methanol was added to a 0.3 ml (0.55 mg/ml) solution of IgG in 20mM phosphate buffer, pH 7.2, titrated until a required level with pH imidazol. The final concentration of methanol did not exceed 3%. Upon the completion of the reaction, which was conducted in the dark, IgG was precipitated with acidic acetone (0.1ml HCl per 50 ml of acetone); the precipitate was then washed twice with acidic acetone, then with H2O. After that the precipitate was diluted in 1.0 ml of 0.1M phosphate buffer containing 6 M chlorhydrate guanide, pH 7.2, after with the absorption spectra were recorded. For calculations of the degree of modifications, the following values of molar absorption coefficients were used: for hemin ε_{390} 93 000 M^{-1}. cm^{-1}, ε_{280} 31,000 M^{-1}. cm^{-1} [2], for IgG $E^{1\%}_{280}$ 14 [7].
42	Dromer F *et al.* (1989)	Fab and Fc fragments were prepared according to Coulter & Harris (1983) using immobilized papain (Pierce Chemical Co., Rockford, IL).
43	Turco J *et al.* (1989)	IgG concentration was determined using the value $E_{1\%279nm}$ = 14.0.[21]
44	Hursting MJ *et al.* (1989)	Fab were prepared from this IgG fraction by papain digestion at 37'C using 2% papain (Type IV, Sigma Chemical Co., St. Louis, MO), 4 mmol/L EDTA, and 20 mmol/L cysteine with gentle agitation (7).
45	Das A *et al.* (1989)	Univalent antibody (Fab) was prepared from purified IgG according to the method of Coulter and Harris.[18]
46	Guzov VM *et al.* (1989)	The IgG concentration was determined spectrophotometrically, using the coefficient of extinction $A_{279\ 1\%}$ = 14.0 [10].
47	Ketsary A *et al.* (1989)	The concentrations of IgG and F(ab')2 fractions were determined by their A279 (2).
48	Sakaguchi DS *et al.* (1989)	Monovalent fragments were generated using procedures described by Coulter and Harris (1983).
49	Savenkova MI *et al.* (1989)	***(Translated from Russian)*** Optimization of usage of immunosorbents in immuno-ferment analysis (IFA) of strophanthin K Solid phase immunosorbents have been used in heterogenous IFA for detection of free and bound antigens. For synthesis of the immunosorbents, activated sepharose is often used: BrCN-sepharose for immobilizing Ig [10], CH-sepharose for immobilizing Fab-fragment antbibodies [8], and thiol-sepharose for immobilizing second antibodies [11].
50	Wessels MR *et al.* (1989	Fab fragments were prepared from protein A-purified IgG by papain cleavage using papain linked to agarose beads (Sigma Chemical Co.), as described (13).
51	Uggla CK *et al.* (1989)	The 3G8 F(ab'): fragment was obtained after papain cleavage and verified by sodium dodecyl sulphate (SDS) gel analysis [8].
52	Liu *et al.* (1989)	The Fab concentration was determined by absorbance to be 1 mg/ml using a value of = 14.8 (21).
53	Schefner M *et al.* (1989)	For the preparation of fab fragments….(23,24)
54	Shima *et al.* (1988)	The Fab fraction of affinity-purified rabbit IgG was prepared using immobilized papain (Pierce Chemical Co.) followed by protein A-Sepharose chromatography essentially according to the method of Coulter and Harris (17).
55	Bizzini *et al.* (1988)	From immune sera, the IgG fraction was precipitated by ammonium sulfate at 50% saturation and was digested by papain (Coulter and Harris, 1983).
56	Newkirk MM *et al.* ()	Fab fragments from human, rat, rabbit and mouse IgG have been made routinely by digesting the immunoglobulins with papain (1-5)
57	Sada E *et al.* (1989)	NO REFERENCE TO COULTER
58	Russell DG *et al.* (1986)	Anti-gp63 IgG was purified by protein A Sepharose chromatography and was

		digested with immobilized papain (21)
59	Gawade S *et al.* (1985)	These fragments were prepared by papain digestion of IgG using immobilized Papain (8).
60	Mohanty JG *et al.* (1985)	According to the literature, polypeptide g corresponds to Fab fragments (7).
61	Fedinec AA *et al.* (1985)	Antibody F(ab) fragments: these fragments were prepared by papain digestion of IgG using immobilized papain (6).
62	Tseng J. *et al.* (1988)	Fab fragments of mAbs (IgG isotypes) and heterologous IgG were prepared by immobilized papain digestion (Coulter and Harris, 1983).